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NOTES ON THE COMMON MOSQUITOES OF BIHÉ AND BAILUNDO DISTRICTS, PORTUGUESE WEST AFRICA.*†

FREDERICK CREIGHTON WELLMAN.

THE following notes are based on the collection of *Culicidae* made by the writer in the region occupied by the districts of Bihé and Bailundo, Portuguese West Africa. The collection was begun in 1903, and most of the different species included in it were kindly determined by Mr. F. V. Theobald, of the South-Eastern Agricultural College, England, who is also describing those specimens which are new to science. None of the mosquitoes in this list (with one exception noted in its place) have been reported by other observers from the districts named, and the collection under consideration is the only one which, to the writer's knowledge, has ever been made of the *Culicidae* of this region. The mosquitoes are described in the chronological order in which they stand in the collecting-record. The writer desires to express here his sincere thanks to Mr. Theobald, and also to Mr. Austen, of the Zoölogical Department of the British Museum, whose interest in the distribution and habits of African blood-sucking diptera is well known, and with whom some correspondence regarding the subject of these papers has been carried on.

Culex viridis, Theob.

Theobald. (In letter from Mr. Austen.)

This green, sylvan, "garden" species cannot be mistaken for any other mosquito. I find, however, that it is occasionally confused with a green midge (*Chironomus pulcher*, Wied.) in company with which it is sometimes found. I have been unable to discover where this mosquito breeds, but I suspect that it may be in the small collections of water which are held in the leaves and bracts of large plants during the rainy season. Appears November to December.

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Myzomyia funesta, Giles.

Theob., *Monograph of the Culicidae*, 1901, 1, p. 178. Giles, *Gnats or Mosquitoes*, 2d ed., 1902, p. 318.

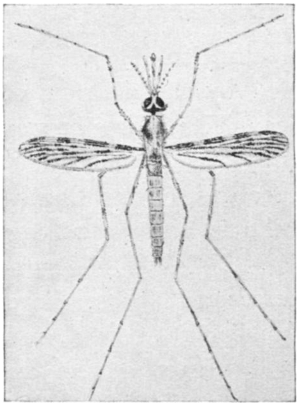

FIG. 1.—*Myzomyia funesta*, Giles. ♀

The small size, position of the cross veins, costa with the apex pale, and three pale spots smaller than the intervening basal dark portions, and characteristic wing fringe with pale areas at the end of all the veins except the sixth, together with the banded, white-tipped palpi, black tarsi, thorax, and abdomen, sufficiently mark this mosquito. *M. rhodesiensis* is strikingly like this species, but can be distinguished from it by its unspotted wing fringe and black-tipped palpi.

M. funesta breeds in springs and clear, slow-running water. Very often found in houses. Does not offer to bite much in evening, unless one quietly sits or stands away from the lamp. This mosquito is expert in crawling into small places and often gets under a mosquito curtain. A very common anopheline,[1] and the principal carrier of malaria in this region.

Cellia pharoensis, Theob.

Mono. Culicid., 1901, 1, p, 169. *Gnats or Mosquitoes*, 1902, p. 302.

The characteristic dark gray thorax with two black, eyelike spots is well shown. The tufts at the sides of the abdominal segments, the scaled antennæ, and the large, white spot in front of the transverse wing veins render the species unmistakable. In addition to the fact of its being an anopheline, this mosquito and the following one have a special

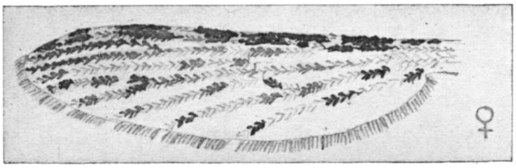

FIG. 2.—Wing of *Cellia pharoensis*, Theob. (After Giles.)

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[1] *Jour. Trop. Med.*, 1904, 7, p. 53.

interest in the light of Low's statement that at least one species of *Cellia* can act as host for *F. nocturna.*

Cellia squamosa, Theob.

Mono. Culicid., 1, p. 167. *Gnats or Mosquitoes*, p. 314.

The somewhat different wing markings and the three conspicuous white longitudinal stripes on the pleuræ easily separate this from the foregoing species. The coal black, densely scaled abdomen with its projecting tufts on the posterior borders of the segments make the mosquito a striking object. It is a rather bold anopheline, and comes readily to a lighted lamp in the evening. Most abundant from November to February.

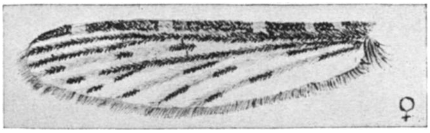

FIG. 3.—Wing of *Cellia squamosa*, Theob.

Anopheles wellcomei, Theob.

Theob. (In letter from Mr. Austen.)

The remarkable size, broad wing markings, and white hind "feet" of this species make it easy to pick out, even without detailed examination of its micro-characteristics. It is generally found near large streams, and I believe that it breeds in running water. A pertinacious biter. Bold even in day time. I find the following note in my diary for June 12, 1905: "Bitten in bright sunlight on the banks of the Cutàto River by an *A. wellcomei*, Theob." In shade it will follow one for some distance.

Pyretophorus austeni, Theob.

Entomologist, 1905, 38, p. 102.

This is a new species described from this region. It is a dark mosquito resembling *P. costalis*, Loew, for which I first mistook it,[1] but differs from the type in several particulars, among which the most prominent are the characteristic thoracic ornamentation and wing markings. The dark thorax is clothed with broad, curved, snowy-white scales. Costa with two white spots and a minute third spot near the base. Length, five mm. It is a quiet and unobtrusive, but domestic, mosquito which will breed in fairly muddy pools. It is of interest to point out, in mentioning this mosquito, that the type of the genus *P. costalis* has been proved to carry malaria, and is said to be an intermediate host of *F. bancrofti.* Most abundant in December to March.

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[1] *Jour. Trop. Med.*, *loc. cit.*

Danielsia wellmani, Theob.

Entomologist, 1905, 38, p. 103.

Another new species from this region which Mr. Theobald has done me the honor to name for me. It is a beautiful and distinct species the chief characters of which are its thoracic and abdominal markings and leg banding. The thorax is black with narrow, curved, bronze scales, but with a cream-colored scaled area on either side which expands and meets anteriorly. Abdomen, violet-black with basal, white, lateral spots, becoming median on the last two segments. Legs, dark brown, mid and hind pair with broad, basal, white band to the metatarsi and first tarsi. The description states that the scutellar scales are somewhat broader than in the type of the genus (*D. albolineata*). Length four mm. The ova are brownish and the larvæ are characteristically marked. I hope to publish a study of the life-history at some future time.

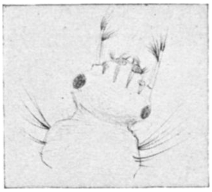

FIG. 4.—Head of larva of *D. wellmani*, Theob. (Magnified.)

Culex taeniorhynchoides, Giles.

Jour. Trop. Med., 1904, 7, p. 369.

A new species. The wings are dark and unspotted. Thorax sooty with golden, curved scales and with dense tufts of black scales over the roots of the wings. The black proboscis has a definite ocherous band on the middle. It is a rather large species. Described from a specimen taken in Bihé district, and sent by Dr. A. Y. Massey of Toronto, Canada.

Myzorhynchus umbrosus, Theob.

Mono. Culicid., 1901, 3, p. 89.

This mosquito, determined by Colonel Giles, presents no striking differences from *Anopheles barbirostris*, Wulp[1] or *Mzr. pseudo-barbirostris*, Ludlow.[2] It has, however, but a single costal spot just inside the apex and a very pronounced yellow and black apical fringe. It seems to be a sylvan species. Length five mm.

Mansonia africana, Theob.

Mono. Culicid., 1901, 1, p. 276. *Gnats or Mosquitoes*, 1902, p. 357.

Mansoniae are perhaps the easiest of all the Culicines to determine. Their peculiar brindled appearance and the densely scaled wings with broad, asymmetrical, flat (bracket-shaped) scales on both sides of the veins render them unmistakable. The only genus which they resemble is *Mucidus*, but they lack its characteristic rough "moldy" appearance, and they possess scales of a somewhat different shape.

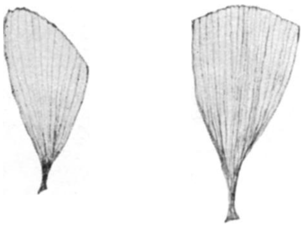

FIG. 5.—Wing scales of (A) *Mansonia* and (B) *Mucidus*, to show difference in shapes. (After Theobald.)

M. africana is distinguished by its thorax, which is ornamented by broad lines of golden-brown and silvery scales and two pale spots. The legs are curiously mottled and banded. Length about four mm. Probably a spreader of filariasis in some regions.

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[1] Leyden Museum *Notes*, 6, p. 48. (Quoted in *Gnats or Mosquitoes*, 1902, p. 308.)

[2] *Jour. N. Y. Entom. Soc.*, 1902, 10, p. 127.

(*To be continued.*)

CORRIGENDA.

P. 270, line 2: instead of "Scolephagus," read "Scolecophagus."
P. 308, under Fig. 4, Plate 8: "Magnification about 985."
P. 311, line 15: instead of "diptheria," read "diphtheria."